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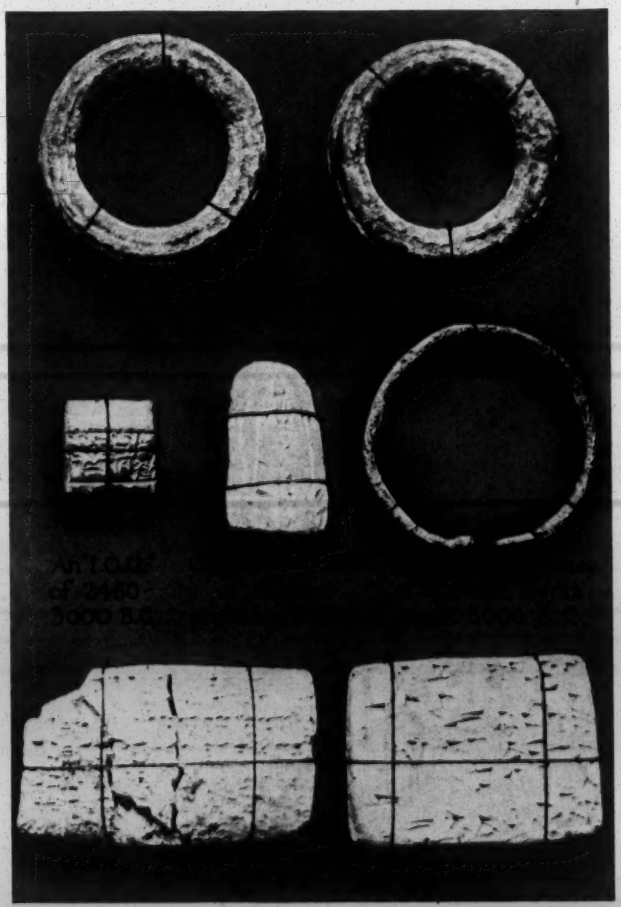

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THESE ONCE BOUGHT LAND AND FOOD

Money,—whether paper currency, bank drafts, gold coins, or scrip,—is but a symbol of value (See Bulletin No. 1).

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What Other Nations Have Used for Money

WHAT shall we use for money?

Scrip, credit plans, clearing house certificates, and other substitutes for paper money and cash may be novel mediums of exchange to the present generation in this country, but similar devices to keep business moving during money crises have often been used in other nations.

France Used Stamps to Make Change

In most cases abroad, it should be pointed out, the emergencies arose from causes somewhat different from those operating in the United States at present. Often the foreign crises followed the sudden fall in value of monetary units, or resulted from steady inflation.

In France, for instance, the need for small change was so great during the period immediately following the World War that thousands of merchants wrapped French postage stamps in wax paper and used the packages as small change in the stores and at the markets.

The average customer did not bother to open the paper but took it for granted that there were four 25-centime stamps in the transparent packet handed to him in place of a franc, and in turn passed it on when he needed to make change. Stamp packets were not as easy to handle as coins, but they served their purpose during the money crisis.

Tokens and Small Paper Notes

Both in France and in Austria local Chambers of Commerce and Boards of Trade issued small coinlike tokens as well as small paper notes like cigarette coupons. The contents of travelers' pockets became loose-leaf gazetteers of the cities along their routes. Theoretically these notes could not be redeemed except in the city of issue, but they were freely accepted while in use at full value far from their places of issue.

In the Russian Caucasus region, following the October Revolution small bills were in great demand, and money changers set up business, charging twenty rubles and more for changing thousand-ruble notes.

In China where prices vary for "big money" and "little money," small change is always a nuisance. The value of each coin fluctuates, but one must carry 10 or 15 pounds of square-holed "cash" as change for one gold dollar. They are strung on cords, 980 of them being counted as a thousand, the other 20 being the reward for counting the pieces and stringing them.

A Gold Piece That Was Priced, But Not Sold

In the office of the American Military Attaché in Peiping there is an American five-dollar gold piece, which has been priced more often than a Rembrandt painting. Officers once were paid the day's rate, which, shortly after the World War, was about $1.10 Chinese money for an American dollar.

But actual gold was worth 50 per cent more. The commanding officer declared that his men were being paid in a debased currency and insisted on receiving a balance to bring the salaries up to the rate for actual gold.

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SWITZERLAND THINKS IN VERTICAL TERMS

Geography must be an easy subject for the Swiss school child. Here in one glimpse is a mighty mountain range, a glacier, the source of a river, a valley, and a highway leading over a pass. The narrow milky stream is the Rhône, which here emerges from the Rhône Glacier. The road meandering away to the right leads to St. Gotthard Pass (See Bulletin No. 5).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Mexican Farmers Find Buried Palace in "America's Hellas"

WHILE preparing their land for crops near the celebrated Chichen Itzá district in Yucatan recently, Mexican farmers uncovered the ruins of a huge stone palace, believed to have been buried by Mayan rulers to save it from the vandalism of the early Spanish conquerors of Mexico.

According to news dispatches from Mexico City this latest find in "America's Hellas" covers an area of nearly two and one-half acres and is probably the center or temple of a large city, whose principal streets and buildings still lie under many feet of jungle soil and vegetation. More than one hundred Mayan cities are known to exist within a few days' riding distance of Mérida, the capital of Yucatan.

Foremost Civilization of Pre-Columbian America

Although more recent discoveries in Oaxaca and elsewhere in Mexico have somewhat dimmed the Maya researches of a decade ago, Yucatan has perhaps the most interesting historical background of any part of Mexico. Here, too, is a promising field of operations for the archeologist who wishes to uncover something entirely new. Scores of Mayan cities are represented to-day on this jungle plain by only a stone or two showing above lush tropical growth.

The Mayan Indians had the foremost civilization in pre-Columbian America. When parts of Europe were barbarous lands the Mayans were building great cities of stone and stucco. They had a working system of astronomy and developed a form of writing, mainly ideographic, but containing some phonetic elements.

They cast copper and gold, and spun and wove cotton which was dyed with brilliant colors. Their calendar, which divided the year into eighteen months with five nameless days left over each year, was more nearly accurate than the Julian calendar.

Although this ancient civilization has vanished except for its ruins, it has left its impress on the Yucateco Indian of to-day. Yucatan teems with place names entirely unchanged from their ancient designation. The Indian dances contain positions like those pictured on the carvings of ruined temples. Mayan is spoken as much as Spanish. Many of its words baffle the ordinary student of languages and pronunciation. Examples are "huehuetl" meaning drum; "xtoles" which means dancers, and, "h'men," sorcerer.

Indians Who Bathe Daily

The pure Mayan types are seldom found now except in the jungles of the south, or in little known Quintana Roo Territory. The Yucatecos, with a touch of white blood, in contrast to many Mexican tribes, have a passion for cleanliness. They resemble the Japanese in their devotion to the daily bath.

Modern Yucatan is fairly well-to-do. The raising of henequen, or sisal hemp, from which binder twine is manufactured, has made it so. This twine is used chiefly in the United States on harvesting machines. Mérida, the capital, is a clean, colorful city.

The Méridanos themselves offer sharp contrasts. Parisian gowns are seen side by side with the old-fashioned huipil and pik, the white, square-necked overblouse and long underskirt formerly decreed by law for the Indians and Mestizas. Descendants of Mayas, once nobles of ancient Mayapan, ride through the streets in trim little Fords, which they call "Fotingos."

Despite the sparseness of its rainfall, Yucatan is not totally arid. Water can be found in any section of the state not far beneath the surface. Although there are

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Hence this solitary gold piece was taken around to the exchange shops every month and its value ascertained; but if it had been sold it would have upset the financial system of the legation, for the Chinese, ready enough to offer a price for a specific coin, refuse to quote prices on theoretical ones.

Fish hooks buy things more readily than cash on certain Alaskan islands, while our New England ancestors often used handwrought nails as "small change."

Note: For additional data on money see "This Giant That Is New York," *National Geographic Magazine*, November, 1930; and "The Geography of Money," December, 1927.

Bulletin No. 1, March 27, 1933.

© *Photograph by Leon Van Dyk*

FEW MEN KNOW AS MUCH ABOUT COINS AS A CHINESE MONEY BROKER

Every trick of the trade is familiar to him, and almost every nation's currency. With his scales and his trays of native and foreign coins he lives by his wits. Often his scales reveal that a gold coin has been neatly hollowed out and refilled with other metal.

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Electricity Gains as Railroad Motive Power

DESPITE economic conditions electric locomotives, year by year, are pushing more steam-driven giants of the rails into the discard. Recently the Pennsylvania Railroad announced electrification of its main lines between New York and Philadelphia, and Premier Mussolini inaugurated a new electric service on the 80-mile line linking Viterbo with Rome, Italy.

Steam locomotives received one of their first assaults from electric locomotives on main line tracks in 1895 when the Baltimore and Ohio Railroad chose to use electric current instead of steam through the Baltimore, Maryland, tunnel; and the New York, New Haven and Hartford Railroad introduced electric locomotives in New England on its line between Nantasket Beach and Pemberton, Massachusetts.

France and America Have Shown Way

These lines, however, totalling only about 22 miles of track, were insignificant compared with the thousands of miles of rails on which steam locomotives still held sway. For the next five years railroad electrification dozed. It was aroused in 1900 when the State Railways of France decided to make use of electricity by equipping some of its lines near Paris.

The next year saw the electrification of New York and New Haven Railroad tracks linking Providence, Rhode Island, with Fall River, Massachusetts, and a part of the Paris, Lyons and Mediterranean lines near St. Gervais, France.

Since 1902, the steam locomotive has had serious competition. To-day, thirty-one countries have electrified about 24,000 miles of track. If all these tracks were concentrated in the United States they would form eight separate railways across the continent from the Atlantic to the Pacific.

About one-fourth of the rails for this super-electric railroad would be supplied by electric railroads of this country. One complete transcontinental track would come from Switzerland, for the diminutive mountain republic largely depends upon electricity for its railroad transportation. More than 2,000 miles each would belong to French, German and Italian railroads.

The larger portion of the remaining tracks would be supplied by the United Kingdom, Sweden, Spain, Austria, The Netherlands, Chile, Brazil, Argentina, Australia, Canada, Mexico, India and Japan; while such countries as Algeria, Morocco, Egypt, Netherland India, China and Cuba, would supply 25 or more miles each. The smallest contribution would be made by Bolivia, which has only nine miles of electrified track.

Switzerland Leads European Countries

Switzerland, with about 3,000 miles of electrically-operated track, outranks its European neighbors. India leads the Asiatic countries in railroad electrification. The Indian tracks would reach from New York beyond Cincinnati, while those of Japan, its nearest Asiatic competitor, would fall short by slightly less than 100 miles. Chile, leader of the South American countries in electrically-equipped trackage, has a mile of track for every day in the year, while Brazil, which ranks second, has about 318 miles.

While the busiest railroad electrification in the United States is concentrated on lines entering New York City—including the Pennsylvania, the Lackawanna,

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no rivers of importance the limestone formations underground are honeycombed with water caves—termed locally "cenotes"—and subterranean streams.

The Indians knew of these caves and rivers ages ago and marked their courses on the surface with heaps of stones, never building their cities except along the flow of an underground stream. Every peublo and ranch has its well and a constant supply of fresh cold water for drinking and irrigation purposes.

Note: For supplementary reading see "Monte Albán, Richest Archeological Find in America," *National Geographic Magazine*, October, 1932; "Unearthing America's Ancient History," July, 1931; "Chichen Itzá, an Ancient American Mecca," January, 1925; "Ruins of Cuicuilco May Revolutionize Our History of Ancient America," August, 1923; "The Foremost Intellectual Achievement of Ancient America," February, 1922; "The Luster of Ancient Mexico," July, 1916; and "The Home of a Forgotten Race," June, 1914.

Bulletin No. 2, March 27, 1933.

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A FREAK OF EXCAVATION AT CHICHEN ITZÁ

This hanging tree root gives a clear idea of the depth of earth and jungle growth that hides most of the ruins of the Mayan world in Yucatan to-day. This colonnade once had a roof, but the roof collapsed, filling in the building to about the level of the tops of the columns, and a forest grew over it. Maya roof construction, chiefly because the principle of the arch was unknown, was the weakest feature of the buildings.

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Toronto, a Fur Trading Post That Became a Metropolis

WHEN Toronto, the busy capital of Ontario, comes into the day's news business matters are generally concerned. But Toronto also loves sports of all kinds.

Recently this Canadian metropolis was host to the Dominion Curling Championship. Curling, a Scotch game in which players slide rounded "stones" down a smooth stretch of ice toward a mark called a tee, is little known in this country, but it has many thousands of enthusiastic followers in Canada.

Important Publishing Center

You cannot gauge Toronto by mere figures. You may set down that greater Toronto has 850,000 people; 2,350 factories, producing each year more than six hundred and fifty-four million dollars' worth of goods; or that it has 10 miles of water front, welcomes hundreds of conventions a year, besides 2,000,000 paid visitors at its Canadian National Exhibition; the greatest hotel, the highest building, and the largest department stores under the Union Jack.

But Toronto is more than that. It is, to a singular degree, the focal point of much of all fresh thinking and industrial planning that goes on in the Dominion of Canada.

You walk in amazement through its busy publishing center, from whose roaring presses come more books and magazines than are printed in all the rest of Canada. That Ontario is an old English settlement, with one-third of all Canada's population, may explain Toronto's leading position as the market place for cultural output.

From a towering news temple in Toronto comes the daily paper of largest circulation in Canada. It is symbolic of the great city's high place in Dominion life, for on publication date its weekly edition is on sale from Vancouver to Halifax, a span of nearly 3,000 miles. Forty high-speed trucks deliver it over the city and central Ontario. At Iroquois Falls its delivery men operate what is claimed to be "the only dog-team news route on earth." Further north, in winter, newsboys on snowshoes carry it.

Toronto gets fat on the new North. Its Stock Exchange is noisy with dealers in mining shares. Many palatial suburban homes were built with money made in northland copper, gold, nickel and timber.

Huge Department Stores

You marvel at the magnitude and splendor of its department stores. They sell goods by mail to customers as far away as the West Indies and New Zealand. One operates its own factories.

Some shops draw their window curtains on Sunday; theaters close and all Toronto goes to church. People say "Sir" to policemen. Yet it's a democratic place, and any day, at a "Quick Lunch," you may see knights, or maybe even a baronet, munching doughnuts beside taximen.

Toronto, as the capital of Ontario, is headquarters for the many legislative and executive members of the Provincial Government. Ontario's prime minister, his cabinet, and other provincial officials occupy the great stone Parliament Buildings.

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the New York Central, the Long Island and the Staten Island railroads—Chicago also has an extensive network of electrified suburban lines.

The Pennsylvania Railroad main line is electrified also between Philadelphia and Paoli, 25 miles to the west. The Pennsylvania expects shortly to complete electrification of its four-track main line between New York and Washington, 258 miles. North America's longest stretch of main line electrification is in the Rockies on the Chicago, Milwaukee, St. Paul & Pacific—441 miles.

Perhaps the strangest contrast afforded passengers on an electrified railroad is to be found in Japan, where silent, smokeless electric trains speed through rice fields in which native farmers plough with oxen and wooden ploughs, a method unchanged for more than a millennium.

Note: See also "America's Amazing Railway Traffic," *National Geographic Magazine*, April, 1923.

Bulletin No. 3, March 27, 1933.

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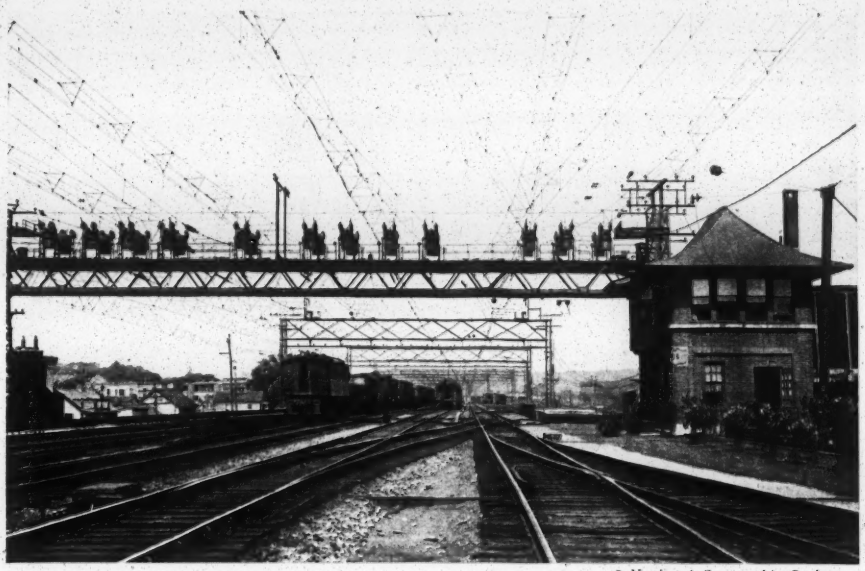

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NO SMOKE, NO DIRT, NO CINDERS

Through a few strands of wire overhead comes the power to move heavy freight trains and luxurious passenger expresses swiftly, cleanly and silently. Some electric railroads use a third rail. A scene on an electrified railroad near New York City.

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Plan New Survey of Swiss Alps

WHILE the peaks of the Swiss Alps are not as high as those of the Himalayas or the Andes they are perhaps the best known to mountain climbers. To make them better known the Swiss Alpine Club is planning a detailed survey of the Alpine region.

The work, which was started last summer, takes the members of this famous sporting organization into the least accessible parts of the mountains, offering new thrills as well as a chance to perform a useful piece of work. Cameras, tripods and camp gear must be lugged over rock faces, dangerous ice, glaciers and steep snow slopes.

Mountain Peaks One of the "Last Frontiers"

It is one of the queer quirks of human nature that the unknown expanses of mysterious waters should have lured explorers from earliest times, and that mountain exploration should have been neglected until a few centuries ago. Indeed, it was nearly 300 years after Columbus made his daring voyage to the New World that Europeans looked to their mountains which, like the poor, were always with them, and made the first successful ascent of Mont Blanc.

Some of this lack of curiosity concerning the ridges and peaks about them may be attributed to the fear of ancient peoples for the gods they believed to inhabit the high hills, and to the later superstitions that devils, bad fairies and evil spirits lurked among them. The Alps, for example, were believed to be the dwelling place of dragons which, if disturbed, would swoop down to wreak vengeance upon the peoples below.

Perhaps, for the same reason, mountains were not considered beautiful until recent times. Even in the time of Sir Walter Scott mountains were regarded as sore spots to mar the eye-filling sweep of the plains. Writers of the Psalms, with sensitive appreciation of natural beauty, refer to hills as holy, rather than as beautiful, places.

There were sporadic attempts at mountain climbing through the centuries before the epochal ascent of Mont Blanc in 1786. Trajan, first mountain climber of Roman history, ascended Etna to see the sun rise, but he was a lone pioneer.

Perils of an Early Climber

For the most part the medieval attitude toward mountain passage seemed to be summed up by a Canterbury monk who prayed in the twelfth century, after traversing the Brenner Pass in the Alps, "Lord, restore me to my brethren that I may tell them that they come not into this place of torment." He prayed thus, he said, because "the marble pavement of the stony ground is ice alone, and you cannot set your foot safely. I put my hand in my scrip that I might scratch out a syllable or two to your sincerity; lo! I found my ink bottle filled with a dry mass of ice; my fingers, too, refused to write, my beard was stiff with frost, and my breath congealed into a long icicle."

Not until 1857 was the English Alpine Club formed and the scores of similar organizations have all been founded since that date. Within the past half century the sport has flourished, the Alps have become thoroughly known, and mountains of other continents, including America, have been explored.

Hand in hand with the sheer sport of climbing has gone the adventure of scientific study, and the "secrets of the hills" which the ancients feared, have given

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In Toronto also resides the Lieutenant Governor, local representative of the Governor General of Canada and, through him, of the King.

Has Largest University in British Dominions

The University of Toronto, first known as King's College, was chartered by George IV in 1827. It boasts the largest enrollment of any seat of learning in the British dominions. It sent 5,300 men to the World War of whom 600 fell.

From the University of Toronto there was given to the world a few years ago one of the most important discoveries, namely, insulin, for the treatment of diabetes. Its discoverer, Dr. F. G. Banting, and his coworker, Dr. Best, are honored in all countries where medical science has its recognized place in the treatment of disease.

Downtown Toronto, with its reclaimed central harbor zone, presents a scene of ceaseless activity. Like many other Canadian cities, Toronto began as a fort and fur trading post. In 1749 the French founded it as Fort Rouille. By 1793 it was a village of 800, when the English succeeded to it. Col. John Graves Simcoe, first Governor of Upper Canada, named it Our Royal Town of York, in honor of the Duke of York. In 1834, with 9,000 inhabitants, it became Toronto, the old Indian name for its site.

Note: For additional material and illustrations of Canada see "Ontario, Next Door," *National Geographic Magazine*, August, 1932; "On Mackenzie's Trail to the Polar Sea," August, 1931; "To-day on 'The Yukon Trail of 1898,'" July, 1930; "Quebec, Capital of French Canada," April, 1930; "Gentlemen Adventurers of the Air," November, 1929; "Canada from the Air," October, 1926; and "Conquest of Mount Logan," June, 1926.

Bulletin No. 4, March 27, 1933.

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A TOBOGGAN RACE IS THRILLING AND SAFE

Although Toronto is one of the busiest commercial cities under the Union Jack, its citizens are lovers of outdoor sports of all kinds. This slide was built in a Toronto park for the use of tobogganers. During the summer months Toronto is the scene of a 15-mile marathon swim which has attracted as many as 200 contestants from several countries.

to moderns a marvelous insight into glaciers, meteorology, and hitherto unknown plant and animal life of the peaks of snow and ice.

Mountains have played a momentous part in national life, from the time when Moses came down from Sinai with the Ten Commandments, to the present day when Mount Everest, highest of the world's peaks, is again in the news as a British expedition attempts to reach its summit.

Note: See also "Skiing in Switzerland's Realm of Winter Sports," *National Geographic Magazine*, March, 1933; "Flights from Arctic to Equator," April, 1932; "The Beauty of the Bavarian Alps," June, 1926; "The World Viewed from the Air," May, 1922; "From London to Australia by Aeroplane," March, 1921; and "The Millennial City (Geneva)," June, 1919.

Bulletin No. 5, March 27, 1933.

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WHY ALPINE CLIMBERS ARE ROPED TOGETHER

If one man slips on the dangerous ice face the others usually can stop his fall by quick use of their ice picks and bracing of the feet. This photograph gives some idea of the difficulties connected with a survey of the Alps, such as that being undertaken by the Swiss Alpine Club.

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